

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/07966

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B03D1/014 B03D1/012 B03D1/01 C07F9/24

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B03D C07F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BEILSTEIN Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KLEE, F.C.; KIRCH, E.R.: "Thiophosphoric Acid Derivatives of Ethylamine, D,L-Methionine, and L-Proline Ethyl Esters" JOURNAL OF PHARMACEUTICAL SCIENCE, vol. 51, 1962, pages 423-427, XP009020165 page 5; table 1	1,2
X	DE 36 29 269 A (HOECHST AG) 10 March 1988 (1988-03-10) page 2, line 63 -page 3, line 53	1-6
A	DE 40 40 475 A (HOECHST AG) 4 July 1991 (1991-07-04) column 1, line 54 -column 2, line 21 -/--	1-6



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

## \* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

15 January 2004

Date of mailing of the international search report

09.02.2004

Name and mailing address of the ISA

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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/07966

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 822 483 A (KLIMPEL RICHARD R ET AL) 18 April 1989 (1989-04-18) column 1, line 18 -column 2, line 42 column 5, line 43 -column 6, line 6 ---	1-6
A	DATABASE CROSSFIRE BEILSTEIN 'Online! Beilstein Institut zur Förderung der Chemischen Wissenschaften, Frankfurt am Main, DE; Database accession no. Reaction IDs 183831; 662317; 72722; 68756; 854051 XP002264353 abstract & HU, CHEN: HUAXUE XUEBAO, vol. 22, 1956, page 219 ---	7,8
A	DATABASE CROSSFIRE BEILSTEIN 'Online! Beilstein Institut zur Förderung der Chemischen Wissenschaften, Frankfurt am Main, DE; Database accession no. Reaction IDs 1165436; 1222107; 1222083; 895279 XP002264354 abstract & KHASKIN, B. A. ET AL.: J. GEN CHEM. USSR, vol. 43, 1973, page 1901 -----	7,8

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP 03/07966

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

**SEE SUPPLEMENTAL SHEET FURTHER  
INFORMATION PCT/ISA/210**

3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

**SEE SUPPLEMENTAL SHEET**

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/EP 03/07966

The International Searching Authority has determined that this international application contains multiple (groups of) inventions, namely

1. Claims 1-6

a known product (ethylamidothiophosphoric acid diisobutyl ester) and use thereof as flotation agent.

2. Claims 7-10

method of preparing a known product  
(ethylamidothiophosphoric acid diisobutyl ester).

INTERNATIONAL SEARCH REPORT

International application No.

PCT/EP 03/07966

Continuation of I.2

The search of invention I initially yielded a very large number of documents detrimental to novelty. This number is so large that it becomes impossible to determine a subject matter in any of the claims for which protection might justifiably be sought (PCT Article 6). For these reasons a meaningful search covering the full scope of the claims appears impossible. The search was therefore directed to

ethylamidothiophosphoric acid diisobutyl ester and the use of a compound of formula I as flotation agent.

The applicant is advised that claims or parts of claims relating to inventions in respect of which no international search report has been established normally cannot be the subject of an international preliminary examination (PCT Rule 66.1(e)). In its capacity as International Preliminary Examining Authority the EPO generally will not carry out a preliminary examination for subjects that have not been searched. This also applies to cases where the claims were amended after receipt of the international search report (PCT Article 19) or where the applicant submits new claims in the course of the procedure under PCT Chapter II.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 03/07966

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
DE 3629269	A	10-03-1988	DE 3629269 A1	10-03-1988
DE 4040475	A	04-07-1991	DE 4040475 A1	04-07-1991
US 4822483	A	18-04-1989	US 4684459 A	04-08-1987
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			US 4789392 A	06-12-1988
			YU 144085 A1	31-12-1987
			ZA 8506955 A	27-05-1987
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			ZW 15285 A1	08-04-1987